

REMARKS

The Office Action dated October 17, 2005 has been received and carefully reviewed. The preceding amendments and the following remarks form a full and complete response thereto. Claims 1, 11 and 14 were amended. Minor amendments are made to the specification. No new matter is added. Accordingly, Applicants request entry of the amendments and reconsideration of the application in view thereof.

Applicants acknowledge that claims 3, 7-9, 13 and 16 were found to contain allowable subject matter.

Claims 1-2, 4-6, 10-12, and 14-15 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Furuya (U.S. Patent No. 5,353,774) in view of Ikeda (U.S. Patent No. 6,304,813). Applicants respectfully traverse the rejection and submit that claims 1-2, 4-6, 10-12, and 14-15 recite subject matter not disclosed or suggested by the cited prior art.

The claims of the present invention are directed to systems and methods of protecting a heating element for a mass-flow sensor that is positioned or disposed in an exhaust gas recirculation (EGR) conduit for a combustion engine. The independent claims of the present application have been amended accordingly to recite that the heating element is for an EGR mass-flow sensor. Furuya and Ikeda are directed to air-fuel (A/F) ratio sensors and not to mass-flow sensors. These sensors are completely different. Both the reasons for heating mass flow sensor (replacing dissipated heat) and mechanism by which thermal shock is produced (onset of hot EGR flow) differ from

the heating problems for A/F ratio sensors mentioned in the cited patents. In the mass-flow sensor, unlike the A/F sensors, the heating element is used to determine the mass-flow of exhaust gases and does not receive any exhaust gases while the EGR valve is closed. Therefore, a tremendous change in temperature can occur during cold engine starts, which can cause damage to the heating element of the mass-flow sensor. The slope detector is used to determine when an undesirable change in temperature occurs, so that heating may be temporarily shut down. Neither Furuya or Ikeda disclose or suggest the subject matter of the claimed invention. Accordingly, Applicants request that the rejection of claims 1-2, 4-6, 10-12, and 14-15 be withdrawn and claims 1-16 be allowed.

In the event that this paper is not timely filled, the Applicants respectfully petition for an appropriate extension of time. Any fees for such an extension together with any additional fees may be charged to Counsel's Deposit Account No. 02-2135.

If for any reason the Examiner determines that the application is not now in condition for allowance, it is respectfully requested that the Examiner contact, by

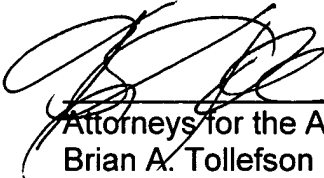
Serial No. 10/786,460  
Dkt. No. 1110-308

telephone, the Applicants' undersigned attorney at the indicated telephone number to arrange for an interview to expedite the disposition of this application.

Respectfully submitted,

Date

1/16/06

  
Attorneys for the Applicants

Brian A. Tollefson

Reg. No. 46,338

ROTHWELL, FIGG, ERNST & MANBECK

1425 K Street, N.W., Suite 800

Washington, D.C. 20005

(202) 783-6040